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Clean Copy of Twice Amended Claim 1

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1. (Twice Amended) A method for changing the section of a billet of a continuous casting plant during continuous casting, wherein opposed sides of the billet are in contact with oppositely positioned roll supports arranged below a continuous casting die, wherein the roll supports are comprised of segments having rolls, wherein adjoining ones of the segments of each roll support are connected to one another by a jointed connection and wherein each segment is configured to be adjustable independent of the other segments with respect to an angular position relative to the billet, and wherein in an initial position of the segments of the roll supports are adjusted to a uniform billet section; the method comprising the step of:

advancing sequentially in a direction of continuous casting the segments toward the billet by moving the jointed connections toward the billet in a controlled sequence of adjusting steps for reducing the section of the billet; or

moving sequentially in a direction of continuous casting the segments away from the billet by moving the jointed connections away from the billet in a controlled sequence of adjusting steps for increasing the section of the billet;

for reducing the section of the billet with a constant casting speed and with the solidification point of the billet

having passed the first and second segments, advancing an exit side of the first segment and an inlet side of the second segment in the casting direction in a first one of the adjusting steps toward the billet by moving the first and second segments at the jointed connection connecting the first and second segments toward the billet by set-point control, and after the first and second segments have reached a target position, advancing an exit side of the second segment and an inlet side of the third segment in the casting direction in a second one of the adjusting steps toward the billet by moving the second and third segments at the jointed connection connecting the second and third segments toward the billet, and after the second and third segments have reached a target position, advancing in further ones of the adjusting steps the third and further segments toward the billet sequentially in the same manner until all segments have reached the target position;

for increasing the section of the billet with a constant casting speed and with the solidification point of the billet having passed the first and second segments, moving the exit side of the first segment and the inlet side of the second segment in the casting direction away from the billet in a first one of the adjusting steps by moving the first and second segments at the jointed connection connecting the first and second segments away from the billet by set-point control, and,

after the first and second segments have reached a target position, moving the exit side of the second segment and the inlet side of the third segment in the casting direction away from the billet in a second one of the adjusting steps by moving the second and third segments at the jointed connection connecting the second and third segments away from the billet, and, after the second and third segments have reached a target position, moving in further ones of the adjusting steps the third and further segments and so forth away from the billet sequentially in the same manner until all segments have reached the target position;

adjusting the segments at a constant adjusting speed with dynamic position control, wherein a predetermined force threshold value is not surpassed;

calculating an adjusting speed of the segments for advancing or moving away the segments based on permissible billet elongation limit, the current casting speed, the current section adjustment, and the resulting volume flow of the billet;

wherein the adjusting speed is calculated, based on the current casting speed, the segment length, and the required adjusting stroke of the segments, by the equation

$$V = Ds/Ls * Vcast$$

wherein Ds is the section change, Ls is the segment length, and $Vcast$ is the current casting speed;

wherein the adjusting steps are carried out by hydraulic adjusting devices; and

B₁ monitoring the adjusting steps via current cylinder pressure of the hydraulic adjusting devices, comprising the step of applying force control instead of position control when a predetermined force threshold value is surpassed and the step of applying position control again when the target position has been reached.
